

Figure 4, Type 2 PLL.

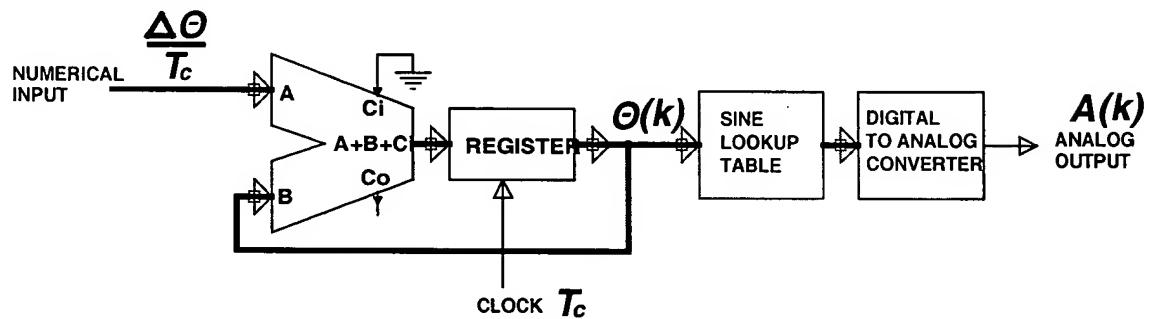


Figure 5, Embodiment of a numerically controlled oscillator.

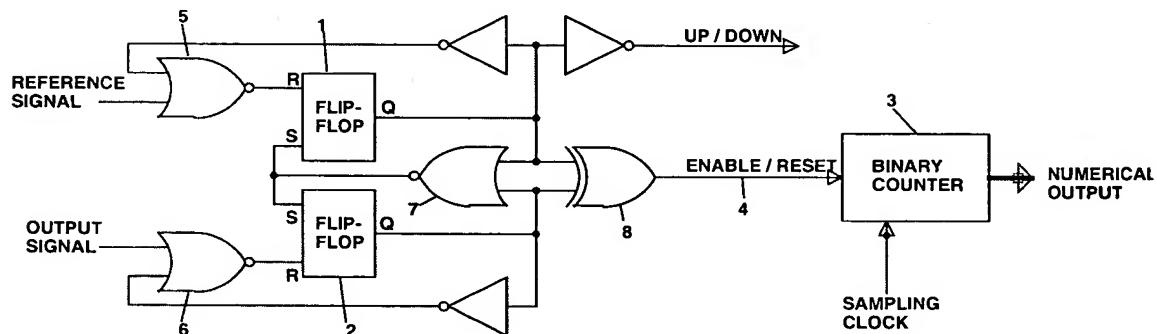


Figure 6, An embodiment of a numerical output phase detector.

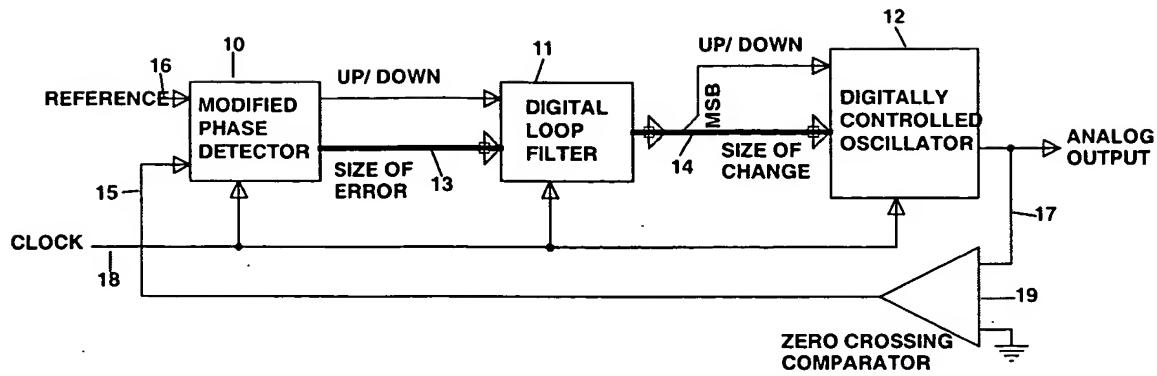


Figure 7, Embodiment of a digital phase locked loop.

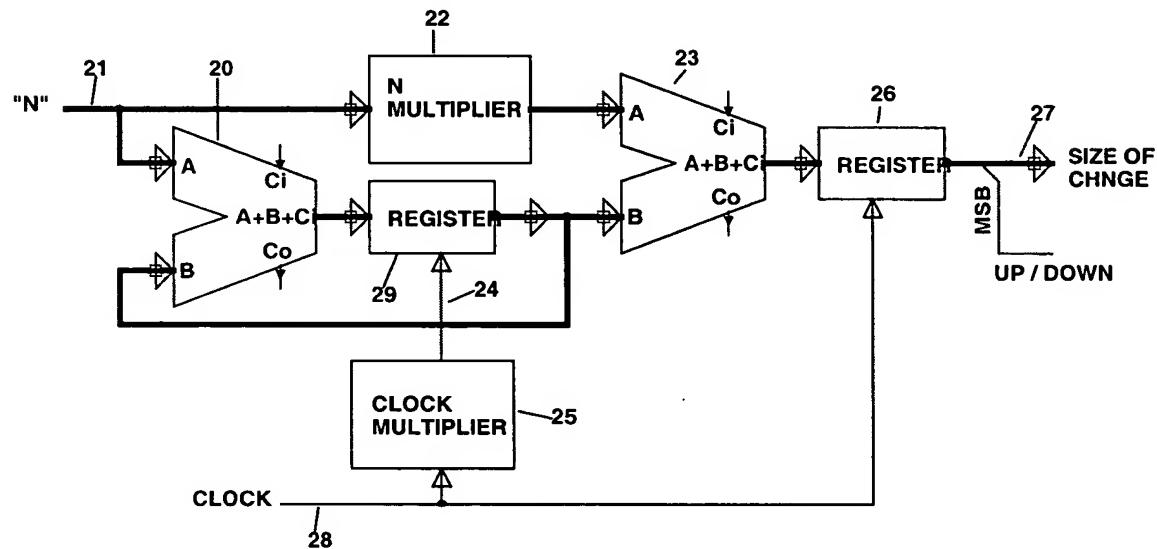


Figure 8, Block diagram of a digital filter for the digital PLL.

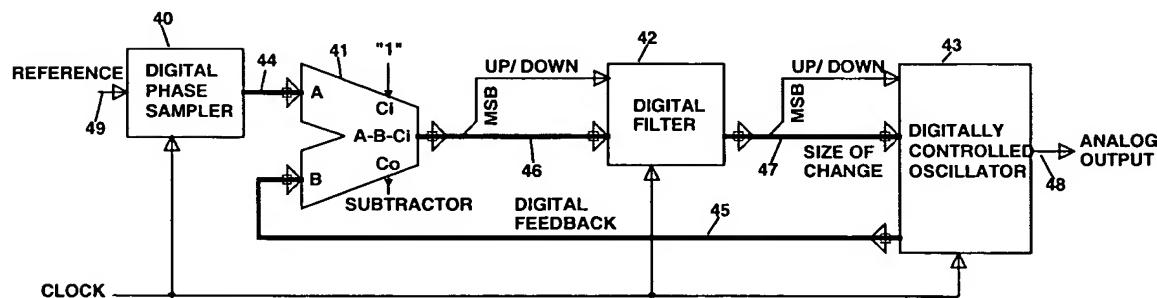
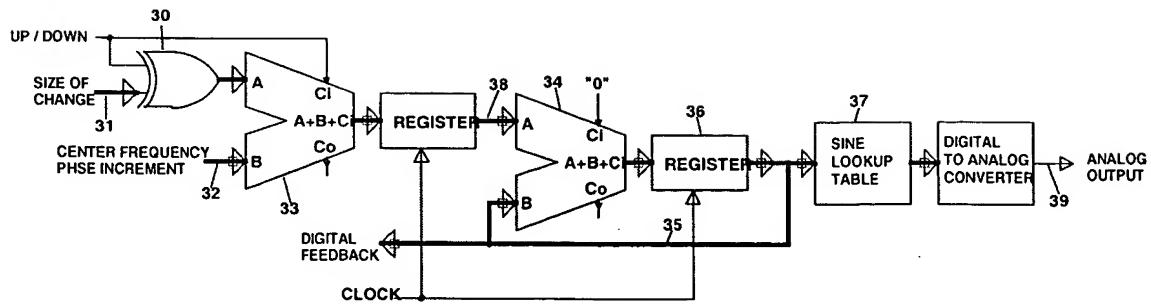
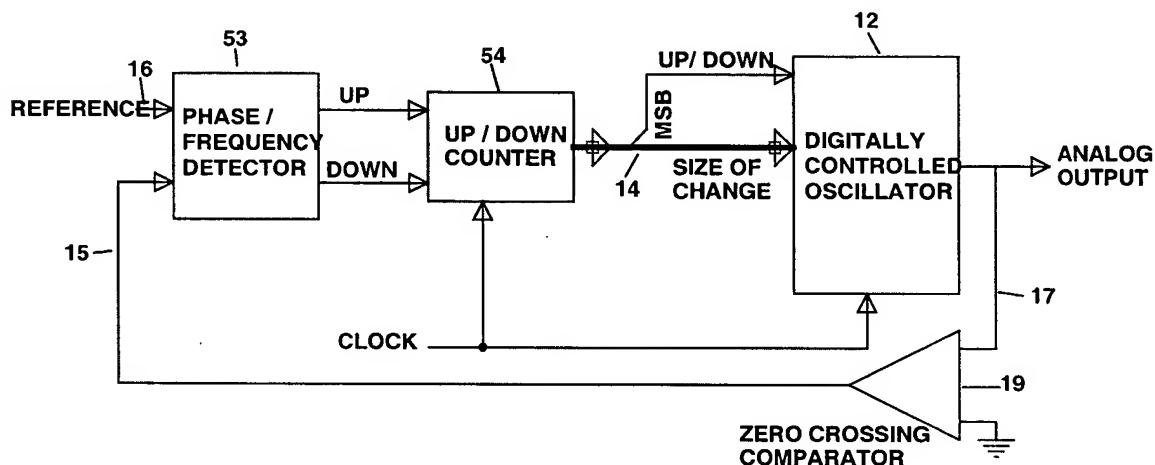


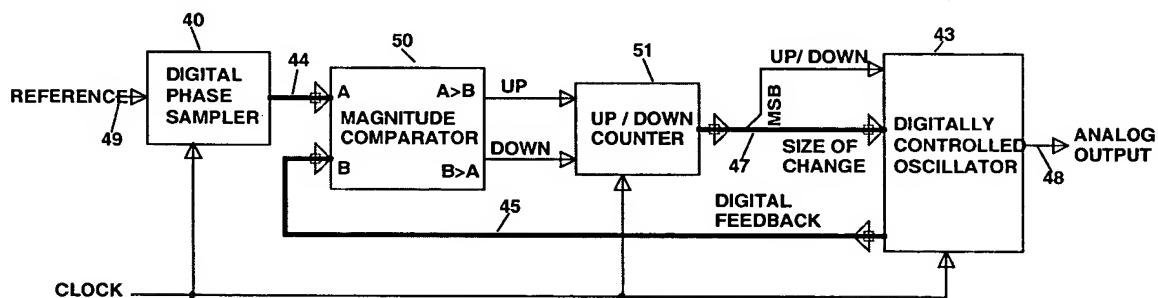
Figure 9, Alternative embodiment of a digital PLL.



**Figure 10, Embodiment of a modified NCO.**



**Figure 11, Block diagram of a Type 1 digital PLL.**



**Figure 12, Block diagram of an alternative type 1 digital PLL.**

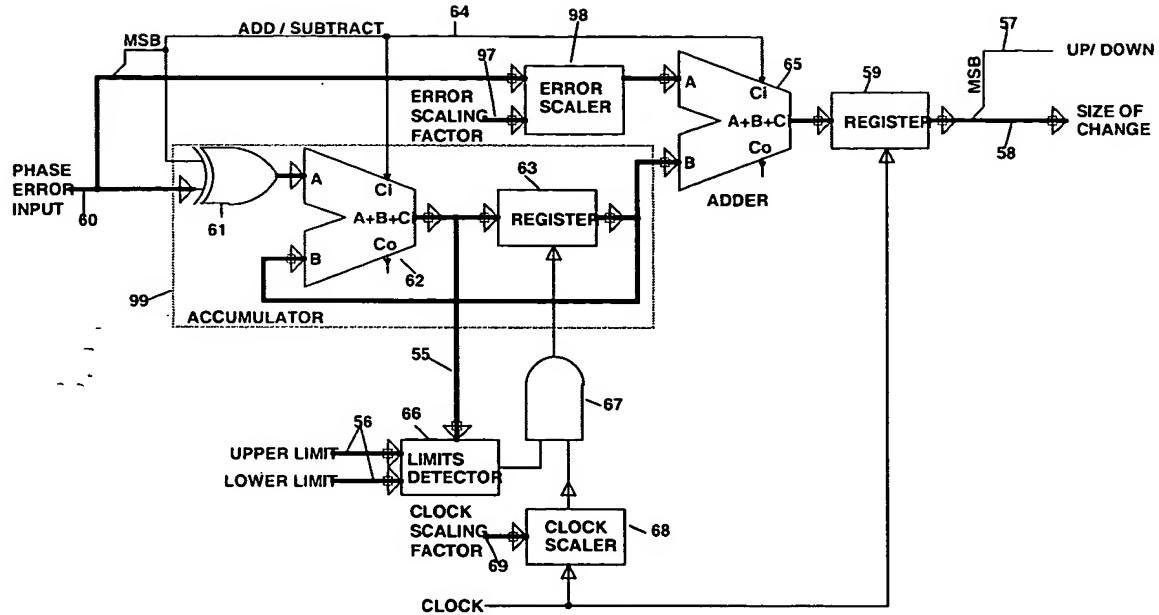


Figure 13, Details of an embodiment of a digital loop filter.

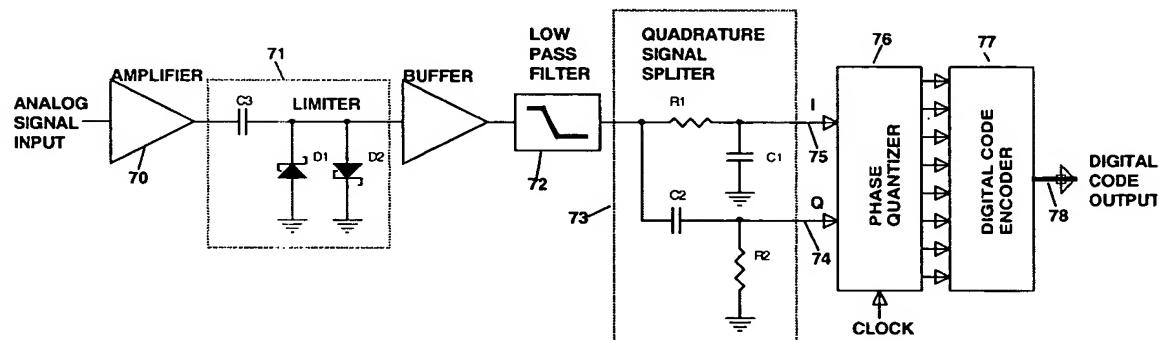
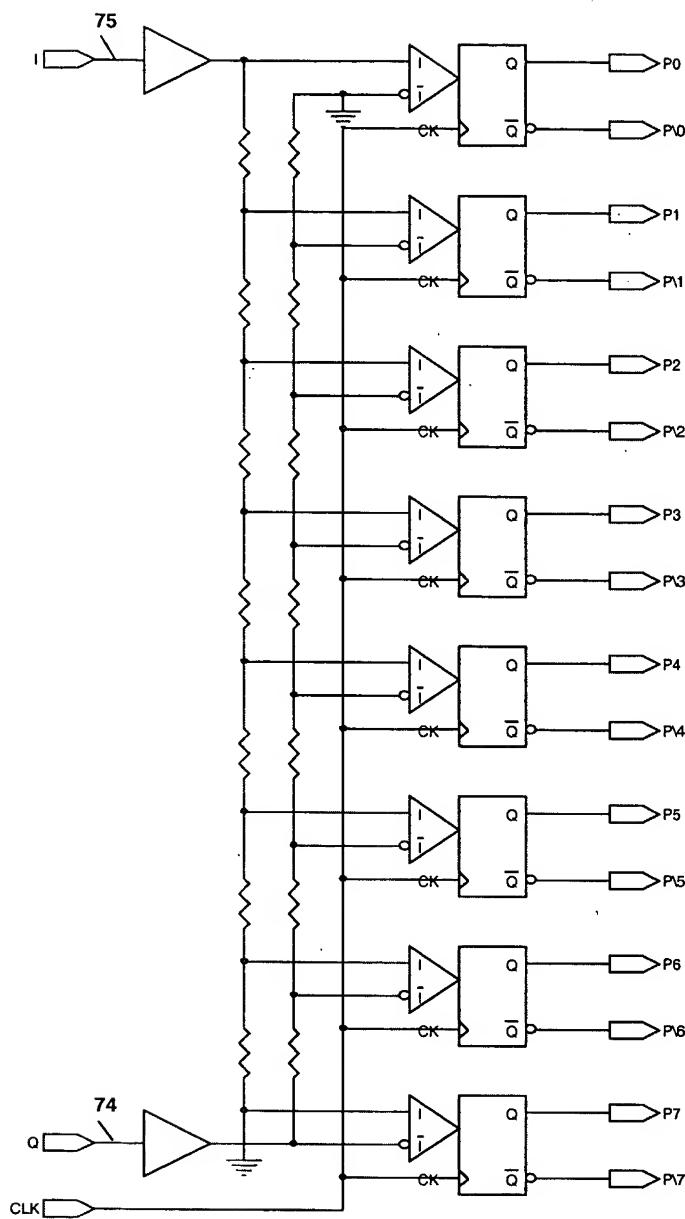


Figure 14, Embodiment of a phase digitizer.



**Figure 15, Embodiment of a phase digitizer.**